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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WU, IVES J

ART UNIT

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1797

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/537,739	Applicant(s) SANDERSON, WILLIAM D.	
	Examiner IVES WU	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/23/06, 9/16/05, 7/19/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

(1). **Claim 12** is objected to because of the following informalities: In claim 12, it recites: oxidizer. It should be **oxidizer** instead of oxidizer. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

(2). **Claims 1-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US04746466) in view of Hirokane (EP-414893A1), Reifschneider (US04738593) and An (US20040022675A1), evidenced by Shoham et al (US05922247A), Martner (US03804329).

As to an elongated cubical-shaped body having a plurality of packing casters at its lower portion, a fog guide at its upper portion and air inlet apertures formed at both sides in a disposal air scrubber in **independent claim 1**, Takahashi (US04746466) discloses an ultrasonic atomizing apparatus (Title), as illustrated in Figure 9, it is cubical shaped and an air intake 91 on the side. Takahashi **does not teach** the packing casters and fog guide as claimed.

However, Hirokane (EP0414893) **teaches** four casters in a sprayer as illustrated in Figure 2.

The advantage of casters is to let mist blower freely movable on the floor (Col. 10, line 40-42).

An (US20040022675A1) **teaches** vapour outlet 1 in Figures 1 & 2, which reads on limitation of instant claim.

The advantage of vapor outlet is to direct the vapor as shown in the Figure.

Therefore, it would have been obvious at time of the invention to install casters of Hirokane at bottom of the ultrasonic atomizing apparatus of Takahashi and vapor guide of An at top of the ultrasonic atomizing apparatus of Takahashi in order to attain the advantages cited above.

Takahashi (US04746466) discloses one air intake 91 in Figure 9. However, it would be obvious to have another one at both sides, because duplication of parts render obvious. *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

As to a double inlet blower mounted in lower body shell defined at the lower portion of the body in a disposal air scrubber in **independent claim 1**, Takahashi (US04746466) discloses the blower 64 in Figure 9, which meets the limitations of instant claim. Takahashi **does not teach** the blower to be double inlet blower as claimed.

However, Reifschneider (US04738593) **teach** centrifugal blower wheel (Title). After the flange configuration is formed on each blade, a complete set of the blades is held in a jig and assembled onto the two end wire hoops for a double inlet blower (Col. 2, line 16-19).

The advantage of double inlet blower is to provide an improved blower wheel with high strength and rigidity capable of operating with freedom from objectionable vibration and noise at high speeds (Col. 2, line 26-36).

Therefore, it would have been obvious at time of the invention to use double inlet blower disclosed by Reifschneider for the blower of Takahashi in order to attain the advantage cited above.

As to an air chamber acting as a sound damper provided on double inlet blower in a disposal air scrubber in **independent claim 1**, Takahashi (US04746466) discloses the air chamber 92 in Figure 9,. Although the air chamber is not on the double inlet blower, rearrangement of parts renders obvious. *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975).

As to an ultrasonic transducer module acting as an atomizer mounted on the air chamber and having a hose conducting the oxidizing vapor and connecting it to the fog guide in a disposal air scrubber in **independent claim 1**, Takahashi (US04746466) discloses ultrasonic module 85 and atomizing chamber 81 with discharge pipe 88 from water column, which reads on the limitations of instant claims. Although Takahashi **does not teach** the use of oxidizing vapor, it would be obvious to use oxidizing liquid because material worked upon is not considered as limitation and of no significance in the claim construction.

As to disposal air scrubber in **independent claim 1**, the disclosure of prior arts meets the requirements of the present claim both in terms of the elements and its functionalities. It is reasonable to presume that the composition of the references would fulfill the utility of disposal air scrubber as presently claimed in light of its design similarities. The burden is shifted to applicants to establish that the disposal air scrubber of the present claim is not the same as or obvious as that set forth by the prior arts.

As to several vapor projectors being mounted in the fog guide in **claim 2**, Takahashi, An **do not teach** multiple vapor projectors in fog guide as claimed. However, it would be obvious to have several vapor outlets within fog guide because duplication of parts renders obvious. *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

As to double inlet blower providing upstream air flow from the air inlet apertures, through the air chamber and the internal space of the body, to the fog guide in **claim 3**, Takahashi (US04746466) discloses the Figure 9, which illustrates on the limitations of instant claim.

As to body having a plurality of packing casters at its lower portion, a fog guide disposed at an upper portion and at least one air inlet aperture formed on a side, an air chamber disposed in body in communication with the fog guide and air inlet, and acting as a sound damper during operation, a blower constructed and arranged for forcing air through the inlet, the air chamber and out the fog guide and an ultrasonic transducer module in communication with the air chamber and a source of liquid oxidizer, the ultrasonic transducer being constructed and arranged to provide atomized oxidizer to air flowing through the air chamber during operation in **independent claim 4**, the disclosure of Takahashi, Reifschneider, An is incorporated herein by

reference, the most subject matters as currently claimed, have been recited in applicants' claims 1 and 3, also in the Figures as cited and have been discussed therein.

As to blower to be double-inlet blower in **claim 5**, the disclosure of Takahashi, Reifschneider, An is incorporated herein by reference, the most subject matter as currently claimed, has been recited in applicants' claim 1, and have been discussed therein.

As to two inlets located on the sides of the body in **claim 6**, the disclosure of Takahashi is incorporated herein by reference, the most subject matter as currently claimed, has been recited in applicants' claim 1, and has been discussed therein.

As to at least one vapor projectors being disposed in the fog guide in **claim 7**, the disclosure of Takahashi, An is incorporated herein by reference, the most subject matter of at least one vapor hose disposed in fog guide as currently claimed, has been recited in applicants' claim 1, and has been discussed therein.

As to double-inlet blower providing air flow of greater than 700 cfm in **claim 8**, in absence of showing criticality of the records, the optimized air flow of greater than 700 cfm by blower in known process renders prima facie obviousness within one of ordinary skills in the art. *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980).

As to ultrasonic transducer producing up to three kilograms per hour of micron sized particles during operation in **claim 9**, in absence of showing criticality of the records, the optimized micron sized particles up to 3 kilograms per hour by ultrasonic transducer in known process renders prima facie obviousness within one of ordinary skills in the art. *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980).

As to fog guide to be constructed and arranged to avoid drops of water vapor from condensing and dripping back into the body in **claim 10**, in view of same shape vapor outlet 1 disclosed by An, and fog guide of applicants, it is examiner's position to believe that the design of vapour outlet of An would be able to avoid drops of water vapor from condensing and dripping back into the body as claimed. Applicants are suggested to prove otherwise.

As to source of water in communication with the ultrasonic transducer in **claim 11**, Takahashi (US04746466) discloses water tank 87 in Figure 9.

As to components of air scrubber in a method of scrubbing air in **independent claim 12**, the disclosure of Takahashi, Reifschneider, An is incorporated herein by reference, the most

subject matters as currently claimed, have been recited in applicants' claims 1, 3, 4 and 7, also in the Figures as cited and have been discussed therein.

As to step of using the ultrasonic transducer to provide atomized oxidizer to the air chamber in **independent claim 12**, Takahashi (US04746466) discloses atomizing chamber 81 (Col. 1, line 28). The ultrasonic vibrator 82 and the driving circuit 85 constitute an ultrasonic atomizing unit 110 (Col. 1, line 34-36).

As to step of using blower to blow air through the inlet and into the air chamber to form scrubbed air and allowing the scrubbed air to exit the body through the fog guide in **independent claim 12**, Takahashi (US04746466) discloses electric fan 84 for blowing air to the atomizing tank 81 (Col. 1, line 17-18). The air is then introduced into the atomizing chamber so as to carry a mist through discharge pipe 88 from a water column generated by action of the vibrator (Col. 1, line 27-30).

As to the limitation of **claim 13**, the disclosure of Takahashi, Reifschneider is incorporated herein by reference, the most subject matter of double-inlet blower as currently claimed, has been recited in applicants' claim 1, and has been discussed therein.

As to the limitation of **claim 14**, the disclosure of Takahashi is incorporated herein by reference, the most subject matter of two inlets located on the sides of the body as currently claimed, has been recited in applicants' claim 6, and has been discussed therein.

As to the limitation of **claim 15**, the disclosure of Takahashi, An is incorporated herein by reference, the most subject matter of at least one vapor projector disposed in the fog guide as currently claimed, has been recited in applicants' claim 7, and has been discussed therein.

As to the limitation of **claim 16**, the disclosure of Takahashi is incorporated herein by reference, the most subject matter of greater than 700 cfm of air flow as currently claimed, has been recited in applicants' claim 8, and has been discussed therein.

As to the limitation of **claim 17**, the disclosure of Takahashi is incorporated herein by reference, the most subject matter of up to 3 kilograms per hour of micron sized particles being produced by the transducer as currently claimed, has been recited in applicants' claim 9, and has been discussed therein.

As to the limitation of **claim 18**, the disclosure of Takahashi, An is incorporated herein by reference, the most subject matter of fog guide construction as currently claimed, has been recited in applicants' claim 10, and has been discussed therein.

As to the limitation of **claim 19**, the disclosure of Takahashi is incorporated herein by reference, the most subject matter of supplying water to the ultrasonic transducer as currently claimed, has been recited in applicants' claim 11, and has been discussed therein.

As to limitations of **claims 20- 26**, in view of the substantially identical scrubber disclosed by prior arts, and by applicant, it would be obvious to be in use for reducing the toxic gases, odors, volatile amines, hydrogen sulfide, food odors, tobacco smoke, allergens as claimed. As evidenced by Shoham et al (US05922247A) that atomizing devices allowing the delivery of disinfectants, fungicides etc (Col. 1, line 57-63). Martner (US03804329) discloses the ultrasonic generator and atomizing apparatus can be used for air purifier (Col. 8, line 30-37), which would be capable of removing contaminants in the air such as toxic gases, odors, food odor, tobacco smoke as well as molds, other biological pollutants as claimed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IVES WU whose telephone number is (571)272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Ives Wu

Art Unit: 1797

Date: February 20, 2008

/Duane S. Smith/
Supervisory Patent Examiner, Art Unit 1797
2-26-08

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